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SUMMARY

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Argentina

POSSIBILITIES OF NEW SOURCES FOR PRODUCING GALACTOMANNAN GUMS

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POSSIBILITIES OF NEW SOURCES FOR PRODUCING GALACTOMANNAN GUMS

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Vegetal gums are sources of labor as well as economical resources in certain geographic zones. In latter years, the so-called galactomannan gums, have gained significance, due to their many industrial applications. Up to the Second World War, the "Eropean carob" or "Mediterranean carob" (Ceratonia siliqua) was the only type of gum, the Mediterranean countries being the exclusive producers of the raw material while the United States of America and Great Britain were the greatest users.

The supply of galactomannan gum for the important American industry was very difficult during World War II. The American consumers, especially the cellulose and paper manufacturers, recommended to search for new sources of production in other geographical areas. The Institute of Paper , Appleton, Wisconsin, found out that the "guar" seed (Cyamopsis tetragonoloba), an annual plant of India, contains a mucilage of similar characteristics to that obtained from the Ceratonia siliqua.

In 1950 a lack of imported products came about in Argentina amongst them was the European carob gum; many importers of this item tried to find a substitute, using several seeds; after repeated failures, they consulted the specialized Institutes. A technical committee, formed by a botanist and two chemists, proved the presence of galactomannan gum in the seed of an indigenous forest species called "espina corona" or "coronillo" (Gleditsia amorphoides)and pointed out the possibilities for using it, giving also directions on the processing methods. It should be interesting to comment on the different procedures followed when confronted with a similar situation of(short age of galactomannan gums in the internal market): in the United States they had experience and were relying on technological investigation; in Argentina, we had none of these qualifications. But in both countries it was possible by

differnt ways, and only by technological search, to find other natural sources of raw materials for obtaining galactomannan. gums.

United States uses at present nearly 7.500.000 kg of "guar" gum and a similar amount of European carob from Europe.

The Argentine Republic has a market of some 120.000 kg of this gum type, used nearly wholly as jellifying agent in manufacturing sweet preserves; private firms manufacture and comercialize the gum of "espina corona", aiming to satisfy local demand; for this purpose it would be necessary to harvest 2.000.000 kg of fruit; at the rate of 3 pesos per kilo this would mean an investment from the manufacturer's side, of some 6.000.000.- pesos for the raw material acquisition. This sum would benefit the people of the production area of the Gleditsia amorphoides, which covers a large northern area of scarce population and little industrialization. Beside reaching the given yielding figure, this would mean for the Argentina a grater foreign exchange availability when avoiding the expence of importation from present producing countries. Finally we would like to point out that experimental cultures are being conducted with "guar" seed in several regions of the country aiming at the whole utilization of the species.

Due to the growing demand of galactomannan gum we bilieve that there are real advantages in using local raw materials able to yield that type of jellifying agent. A search aiming to find other seeds rendering that type of polysaccharides, should be -if successful- a contribution of science and technology to the economical development of the areas where these vegetal species grows, since the harvesting and the industrialization of seeds will create labor possibilities, i.e., new resources and grater demand of labor with the resulting social benefits.

The National Institute of Industrial Tedhnology (Instituto Nacional de Tefnología Industrial, I.N.T.I.) in Buenos Aires, Argentina, hopes to conduct a systematical study of the species of indigenous seeds growing in our country. Said Institute, cooperating with other interested Organizations abroad, could be helped the searching of other sources of galactomannan gums, as a contribution of technology for the benefit of poorly developed regions.

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